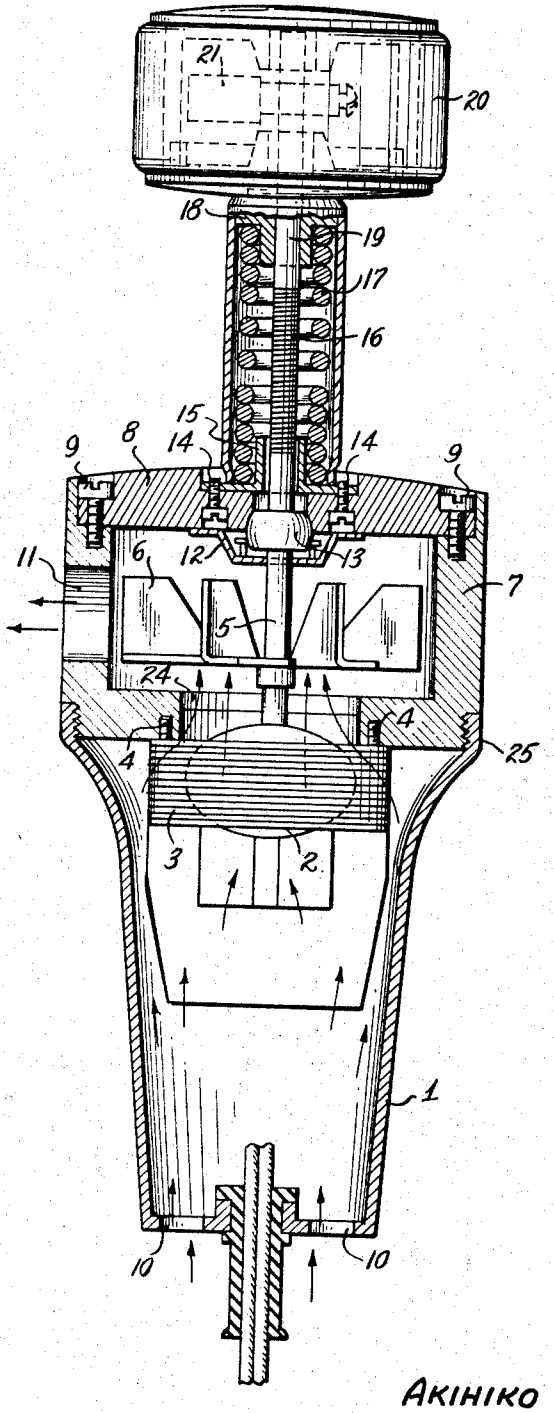
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MASSAGING VIBRATOR WITH MEANS FOR DIRECTING HEATED AIR ONTO A PERSON

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MASSAGING VIBRATOR WITH MEANS FOR DIRECTING HEATED AIR ONTO A PERSON

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ABSTRACT OF THE DISCLOSURE

A massaging device comprising a handle containing a motor, a vibrator connected to said handle by spring means and driven by the motor through additional spring means, and a fan in the handle for drawing air in to be heated by said motor and then directed against the body.

The present invention relates to a vibrator comprising a fan fitted to its driving shaft which acts to enhance the massaging effect as well as to prevent overheating of the motor.

Electrical massaging vibrators which generate vibrations due to the revolution of a motor are well known. In the application of such vibrators, a more satisfactory effect will be achieved if the vibrator is applied just after a bath has been taken, or if the affected part of the body has first been warmed with a hot compress. However, it is not always convenient to take a bath or apply a compress just before massaging with such a vibrator. It is therefore desirable to provide some other means of warming the part to be massaged. Particularly in cold weather, the direct application, without prewarming, of a vibrator which may be far cooler than the human body has a poor massaging effect, especially for old people and often causes a temporary contraction of the skin. Moreover, in the kind of vibrator which has a grip small enough to be grasped by the hand, the motor installed therein is necessarily small. Since, in order to develop sufficient vibration the rotary part must be fairly heavy, it imposes a substantial burden on the motor. Therefore the motor becomes overheated and this makes it necessary to stop the motor every so often so that it can be cooled. Such a vibrator has therefore the drawback that it cannot be used continuously over a long period of time.

The present invention has been successful in producing an improved massaging effect by providing a new vibrator capable of long continuous use and free from the said drawbacks of conventional vibrators.

In order that the invention may be clearly understood, one embodiment thereof will now be described with reference to the annexed drawing, in which:

The drawing shows an elevational view, partly in axial section, showing my new vibrator.

As shown in the drawing, the main assembly comprises a cylinder **1** which serves as a handle and a linking cylinder **7**. Within the handle **1** there is a motor comprising a rotor **2** and a fixed iron core **3**. The fixed iron core **3** is attached by a fastener **4** to the linking cylinder **7**. A fan **6** is attached to the drive shaft **5** coupled to the rotor **2**. As the fan **6** rotates with the drive shaft, air is drawn into the suction hole **10** at one end of the handle **1** and as this air passes through the gap in the fixed iron core or around its periphery, it is warmed and this warmed air is discharged in the direction indicated by the arrow, after passing through the air hole **24** and the exhaust **11** in the linking cylinder **7**.

In the example shown, the cover **8** is attached to the linking cylinder **7** by means of screws **9**. Consequently the

main assembly is easy to dismantle and clean. A spring-holder **15** is attached at its lower end to the cover **8** by screws **14**. A portion of the driving shaft **5** coupled to the rotor **2** extends into the spring-holder **15**. For the sake of stability, the portion of the drive shaft **5** which passes through the cover is provided with a bearing **13** supported in a bearing cup **12**. One end of the spring **16** is attached to the tip of the drive shaft **5**, while the other end of the spring **16** is coupled to the weighted shaft **19**. The drive shaft **5**, spring **16** and weighted shaft **19** are encircled by a spring **17** connected at one end to the vibrating unit **20** and at the other to the spring-holder **15**. Weighted shaft **19** carries an eccentric weight **21** which rotates within and causes vibration of the vibrating unit **20**, which has a massaging effect when applied to the human body. To keep the weighted shaft **19** stable, a bearing **18** for said shaft is positioned between the top of spring **17** and the vibrating unit **20**. The motor-holding part in the handle **1** flares outwardly to form a ring **25**, into which the linking cylinder **7**, having a larger diameter than the handle **1** is screwed. This arrangement permits installation of a relatively large fan **6**, and at the same time makes it easy to separate the handle **1** from the linking cylinder **7**, to clean the inside.

As described above, in this invention a fan **6** is attached to the driving shaft **5** of the motor which drives the vibrating unit. The air drawn into the handle by the fan is caused to circulate through the fixed iron core **3** or around its periphery through the motor and is discharged out of the air exhaust **11**, thereby causing steady ventilation of the main assembly. In this manner the motor is always cooled by the passing air, and thus protected from overheating.

Since it is kept at approximately constant temperature, the motor can run continuously for many hours without having its mechanism damaged. This is in practice very convenient as compared to the conventional vibrator which is subject to extremely high increases in temperature rise and consequently requires stopping at short intervals. The air introduced through the suction hole **10** is warmed to a certain degree by the heated motor before it goes out in the direction indicated by the arrow through the exhaust hole **11**. If this warmed air is projected onto the body before massaging with the vibrating unit **20**, there will be no sudden change in the body temperature of the user of this vibrator and its full effect will be obtained immediately after its application to the body. Moreover, while a body part is being massaged, the next part to be massaged can be preliminarily treated by said warmed air, so that the massaging can proceed smoothly and at the same time the capillaries will be expanded, creating the same condition as just after bath-taking. The synergistic effect of vibration and heat in this case yields excellent results which cannot be attained with the traditional vibrator. This superb effect of massaging has a remarkable healing power. Meanwhile, the expansion of the capillary blood vessels and consequent promotion of blood circulation facilitates the rapid penetration of a medicament or lotion into the treated part of the body.

The vibraor according to the present invention is simple in construction, cheap to manufacture and suited to mass production. Moreover, it is economical, in that the power cost is no more than that for a conventional vibrator, because the fan **6** is driven by the same motor as drives the vibrating unit **20**.

What is claimed is:

1. In a massaging device comprising a hollow handle, a motor within said handle, a drive shaft driven by said motor and a vibrator outside said handle driven by said drive shaft, the improvement which comprises a fan mounted on said drive shaft in the hollow handle and

positioned to draw ambient air through said motor for heating thereby, means for directing said heated air against a selected portion of the body, first spring means supporting said vibrator on said hollow handle, and second spring means connecting said vibrator and said drive shaft.

2. A device as claimed in claim 1 in which said fan is mounted on said drive shaft between said motor and vibrator.

3. A device as claimed in claim 1 in which said directing means is a cylinder of larger diameter containing said fan and connected to said handle, said cylinder being provided with an inlet athwart which said motor is mounted and an exhaust port through which air arriving through said inlet is exhausted.

4. A device as claimed in claim 3 in which said motor comprises an iron core defining a central orifice in alignment with said inlet.

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